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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,377	02/01/2007	Juichi Kubo	062284	9876
38834 7590 11/27/2009 WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036				
EXAMINER MCNALLY, DANIEL				
ART UNIT		PAPER NUMBER		
1791				
NOTIFICATION DATE		DELIVERY MODE		
11/27/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

### Office Action Summary

**Application No.**

10/572,377

**Applicant(s)**

KUBO ET AL.

**Examiner**

DANIEL MCNALLY

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/5/2009 has been entered.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 4, and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swiggett et al. [US4693778, of record, previously cited, herein "Swiggett"] in view of Hisatsune [JP61-62575A, newly cited] and optionally in view of either one of Keyworth et al. [US5534101, of record, previously cited, herein "Keyworth"] or Ikushima [US6527142, of record, previously cited].

Swiggett discloses a method and apparatus for applying conductor wiring to a substrate. Swiggett discloses the conductor wiring may be and optical fiber (column 1, lines 10-13).

With regard to claim 1, the method comprises feeding an optical fiber through a nozzle (guide head 78) onto a substrate. The optical fiber is coated with an adhesive layer. However Swiggett is silent as to how the adhesive layer is applied to the optical fiber, specifically coating the optical fiber with an adhesive while passing the fiber through the nozzle. Swiggett is also silent as to keeping the amount of adhesive constant by controlling pressure for pushing out the adhesive (column 2, line 15-column 3, line 66).

Hisatsune discloses a method of applying an adhesive to a wire. The method comprises providing a nozzle (5) with an opening with an inner diameter larger than the outer diameter of the wire (3), feeding a wire (3) through the nozzle and simultaneously ejecting the wire with an adhesive (4) coating from the nozzle. The method further comprises controlling the pressure in the nozzle to push out a constant amount of adhesive using a controller (8).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Swiggett by applying the adhesive coating to the optical wiring while passing the wiring through the nozzle while controlling the pressure pushing out the adhesive simultaneously with the optical wiring as taught by Hisatsune in order to apply a constant amount of adhesive sufficient to form a bond without wasting excess adhesive.

In the event that Hisatsune's disclosure of the wiring method does not sufficiently disclose controlling the pressure for pushing out the adhesive, Keyworth discloses a method for forming a waveguide on a substrate. Keyworth discloses controlling the

amount of air pressure greater than atmospheric pressure to the surface of the adhesive held in the nozzle to force the adhesive out of the nozzle. Ikushima discloses a method of dispensing a constant amount of liquid from a nozzle. Ikushima discloses controlling the pressure applied to the liquid in the reservoir to the ejection valve to control the amount of adhesive dispensed from the nozzle (column 1, line 57 - column 2, line 65). It would have been obvious to one of ordinary skill in the art at the time of invention to optionally modify the method of Swiggett and Hisatsune by controlling the amount of pressure applied to the liquid being dispensed as taught by either one of Keyworth or Ikushima in order to dispense a constant amount of adhesive.

With regard to claims 3 and 4, Swiggett discloses relative movement between a dispenser and a substrate can be caused by either fixing the substrate and moving the dispenser, or fixing the dispenser and moving the substrate (column 3, lines 5-16).

With regard to claim 7, Swiggett discloses the apparatus comprises a nozzle (78) having an inner diameter larger than an outer diameter of the optical fiber, and a stage for supporting a substrate, wherein in the stage and the optical fiber dispenser are movable relative to each other. Swiggett is silent as to the nozzle (78) being capable of ejecting a liquid adhesive material onto an optical fiber, or a controller for controlling the air pressure for pushing the adhesive through the nozzle.

Hisatsune discloses an apparatus for applying an adhesive to a wire. The apparatus comprises a nozzle that is capable of simultaneously ejecting an adhesive coating with a wire, and a controller that is capable of controlling the pressure pushing the adhesive out of the nozzle.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the apparatus of Swiggett by including a nozzle and controller as taught by Hisatsune in order to simultaneously apply an adhesive coating to the wire while applying the wire to the substrate.

In the event that Hisatsune's disclosure of the wiring apparatus does not sufficiently disclose the controller capable of controlling the pressure for pushing out the adhesive, Keyworth discloses an apparatus for forming a waveguide on a substrate. Keyworth discloses a controller for controlling the amount of air pressure greater than atmospheric pressure to the surface of the adhesive held in the nozzle to force the adhesive out of the nozzle. Ikushima discloses an apparatus for dispensing a constant amount of liquid from a nozzle. Ikushima discloses a controller for controlling the pressure applied to the liquid in the reservoir to the ejection valve to control the amount of adhesive dispensed from the nozzle (column 1, line 57 - column 2, line 65). It would have been obvious to one of ordinary skill in the art at the time of invention to optionally modify the apparatus of Swiggett and Hisatsune by including a controller for controlling the amount of pressure applied to the liquid being dispensed as taught by either one of Keyworth or Ikushima in order to dispense a constant amount of adhesive.

With regard to claims 8 and 9, Swiggett discloses the apparatus is capable of relative movement between a dispenser and a substrate and be caused by either fixing the substrate and moving the dispenser, or fixing the dispenser and moving the substrate (column 3, lines 5-16).

4. Claims 1, 3, 4, 7, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisatsune in view of Swiggett.

With regard to claim 7, Hisatsune discloses an apparatus capable of wiring an optical fiber. The apparatus comprises a liquid material ejecting unit (Figure 2) with a nozzle (5) having an inner diameter larger than an outer diameter of an wire (3) and allowing the wire and adhesive (4) coating to be simultaneously fed through the nozzle, a controller (8) to control air pressure for pushing out the adhesive. Hisatsune is silent as to a stage for supporting the substrate onto which the wire is applied, wherein the liquid material ejecting unit and stage are movable.

Swiggett discloses an apparatus for applying an optical fiber to a substrate. The apparatus comprises a wire dispensing head and a stage. The stage and dispensing head are movable relative to each other.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the apparatus of Hisatsune to include a stage that is movable relative to the liquid material ejecting unit as taught by Swiggett in order to apply the optical fiber over a pattern on the surface of a substrate held by the stage.

With regard to claims 8 and 9, Swiggett discloses the apparatus is capable of relative movement between a dispenser and a substrate and be caused by either fixing the substrate and moving the dispenser, or fixing the dispenser and moving the substrate (column 3, lines 5-16).

With regard to claim 1, Hisatsune discloses a method capable of wiring a wire onto a substrate. The method comprises feeding a wire (3) through an adhesive ejecting

nozzle (5) having an inner diameter larger than an outer diameter of the wire, to obtain a wire coated with adhesive (4) wherein the amount of adhesive applied to the wire is held constant by controlling the pressure pushing out the adhesive, and applying the wire to the surface of a substrate (1) by simultaneously ejecting the wire and the adhesive. Hisatsune is silent as to the wire being an optical fiber that forms optical wiring on the substrate.

Swiggett discloses a method for applying conductor wiring to a substrate. Swiggett discloses the conductor wiring may be an optical fiber (column 1, lines 10-13). The method comprises feeding an optical fiber through a guide onto a substrate to form the optical wiring.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Hisatsune by applying an optical fiber as optical wiring on a substrate as taught by Swiggett in order to create an optical wiring pattern on a substrate.

With regard to claims 3 and 4, Swiggett discloses relative movement between a dispenser and a substrate can be caused by either fixing the substrate and moving the dispenser, or fixing the dispenser and moving the substrate (column 3, lines 5-16).

5. Claims 2, 6, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Swiggett and Hisatsune, or Hisatsune and Swiggett, and further in view of Keyworth.

Either one of Swiggett and Hisatsune, or Hisatsune and Swiggett discloses a method and apparatus for applying optical wiring to a substrate. Applicant is referred to



paragraph 3 for a detailed discussion of Swiggett and Hisatsune, and to paragraph 4 for a detailed discussion of Hisatsune and Swiggett.

With regard to claims 2 and 11, either one of Swiggett and Hisatsune, or Hisatsune and Swiggett are silent as to a controller that controls the speed at which the optical fiber is introduced. Keyworth discloses controlling the speed at which the nozzle is moved relative to the substrate, which will affect the rate at which the optical fiber needs to be fed. If the nozzle is moving faster the optical fiber will also need to be fed faster and if the nozzle is moved slower the optical fiber would need to be fed slower. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method and apparatus of either one of Swiggett and Hisatsune, or Hisatsune and Swiggett to include a controller for controlling the speed at which the nozzle is moved which controls the feeding speed of the wire as taught by Keyworth in order to ensure accurate placement of the optical fiber on the substrate.

With regard to claims 6 and 10, either one of Swiggett and Hisatsune, or Hisatsune and Swiggett are silent as to the adhesive being UV curable or including a UV lamp for curing the adhesive. Keyworth disclose dispensing an adhesive coating that is UV curable and using a UV lamp to cure the adhesive (column 4, lines 1-21 and lines 38-48). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method and apparatus of either one of Swiggett and Hisatsune, or Hisatsune and Swiggett by using a UV curable adhesive and a UV lamp to cure the adhesive as taught by Keyworth in order to quickly cure the adhesive holding the wire to the substrate.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Swiggett and Hisatsune, or Hisatsune and Swiggett, and further in view of Hawkins [US3742107, of record, previously cited].

Either one of Swiggett and Hisatsune, or Hisatsune and Swiggett discloses a method for applying optical wiring to a substrate. Applicant is referred to paragraph 3 for a detailed discussion of Swiggett and Hisatsune, and to paragraph 4 for a detailed discussion of Hisatsune and Swiggett. Swiggett disclose an optical fiber but is silent as to a polymer optical fiber.

Hawkins discloses a method of making an optical fiber. Hawkins discloses glass fibers are well known, however polymeric optic fibers can be used and have the added benefit of increased strength and flexibility (column 1, lines 10-20).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of either one of Swiggett and Hisatsune, or Hisatsune and Swiggett by using a polymeric optical fiber as taught by Hawkins in order to increase the strength and flexibility of the optical fiber.

#### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

First it is noted the previous amendment submitted after final on 9/1/2009 was not entered. In the proposed amendment after final the applicant removed the language "higher than an atmospheric pressure." Applicant asserts the language "higher than an atmospheric pressure" was removed in a previous amendment; however the previous

amendment was not entered. In any event the language does not appear in the claims submitted 10/5/2009 therefore it is assumed it is removed from the claims.

With regard to the rejections over the prior art. Applicant argues there is no reason the coated conductor of Swiggett would be replaced with an uncoated optical fiber. Swiggett discloses the conductor can be an optical fiber (column 1, lines 10-13). Swiggett is silent as to coating the conductor with an adhesive in the nozzle of the apparatus. Newly cited Hisatsune discloses coating a wire as it passes through a nozzle.

Applicant's arguments directed toward Berndt are moot as Berndt is no longer relied upon in the rejections.

Applicant asserts there is no reason why the teachings Keyworth and Ikushima are combined with Swiggett. Keyworth and Ikushima disclose discloses how a controller similar to the controller of newly cited Hisatsune operate. Furthermore Keyworth discloses the dispensing nozzle can be used to dispense a UV curable material.

Applicant asserts the pressure wheel of Swiggett wipes away the adhesive on the conductor. Swiggett does not support the removal of the adhesive by the pressure wheel. Furthermore assuming the pressure wheel did remove the adhesive, newly cited Hisatsune discloses applying the wire to a substrate without the use of a pressure wheel.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MCNALLY whose telephone number is (571)272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel McNally/  
Examiner, Art Unit 1791

/John L. Goff/  
Primary Examiner, Art Unit 1791

DPM  
November 9, 2009